SUMMARY | **DECISION SUPPORT** | **PATIENT EDUCATION/SELF MANAGEMENT**

GOAL

- ✓ **OFFER SCREENING**
- ✓ **IDENTIFY ACUTE SEROCONVERSION**
- ✓ **IDENTIFY CHRONIC INFECTION**

(SEE IN FOCUS "SEEK, TEST, TREAT")

ALERTS ALL HIV INFECTED PATIENTS MUST BE MANAGED IN CONJUNCTION WITH AN HIV SPECIALIST.

THE FOLLOWING HIV INFECTED PATIENTS NEED PROMPT EVALUATION:

⇒Newly diagnosed HIV infection.

⇒Acute seroconversion: look for fever, lymphadenopathy, pharyngitis, rash, myalgia, diarrhea and/or headache present for 6-8 weeks; note that HIV antibody testing might be negative this early in the infection. Consider HIV viral load testing in addition to antibody testing in suspected acute seroconversion.

⇒Those on treatment but only receiving one or two antiretroviral medications (note that some coformulations exist)

⇒Those on treatment for an extended period of time in whom viral load is remains detectable

⇒ New onset fevers, unintentional weight loss >10%, fatigue, dyspnea, skin lesions, anemia regardless of CD4.

⇒CD4 < 200 cells/$mm^3$and not on PCP prophylaxis.

⇒CD4< 50 cells/$mm^3$and not on MAC prophylaxis.

⇒CD4 <200 cells/$mm^3$and dyspnea, cough, fevers.

⇒CD4 <100 cells/$mm^3$and headache, blurry or lost vision.

DIAGNOSTIC CRITERIA/EVALUATION

BASELINE LABS:	
HIV antibody (ELISA/Western blot) if not in UHR	RPR
CD4 cell count	Urinalysis
HIV viral load, quantitative	Urine Gonorrhea/Chlamydia (NAAT)
HIV Genotype if newly diagnosed and no genotype report in UHR	Toxoplasmosis IgG
CBC with differential	HLA B 5701
Complete Metabolic Panel	PPD if not done in past 1 year and no hx positive PPD
Fasting Lipid panel	PA and lateral CXR if not in chart
Hepatitis A serology, Hepatitis B sAg, cAb, sAb; Hepatitis C Ab	
ROUTINE LABS: QUARTERLY	
CD4 cell count	CBC with differential
HIV Viral load, quantitative	Complete Metabolic Panel

ROUTINE LABS: ANNUALLY AND IF INDICATED			
RPR	Hep C Ab if previously negative	Urine Gonorrhea/Chlamydia (NAAT)	Fasting lipid

✓ **COMPLETE HISTORY & PHYSICAL INCLUDING:** date of diagnosis; transmission risk factor; lowest (nadir) CD4; history of opportunistic infections and other AIDS related conditions; risk reduction strategies; medications; smoking/substance use history; vaccination history; thorough review of systems

TREATMENT OPTIONS

INITIATING TREATMENT: GUIDELINES FOR WHEN TO START AND WHAT TO USE

NOTE: DO NOT INITIATE, CHANGE OR DISCONTINUE HIV MEDICATIONS WITHOUT FIRST CONSULTING AN HIV SPECIALIST.

1. When to start: antiretroviral therapy should be initiated, in consultation with an HIV specialist, in patients with
   - a. History of or current AIDS defining conditions: offer treatment regardless of CD4
   - b. CD4 cell count thresholds:
     - i. CD4 <350 cells/mm^3: offer treatment
     - ii. CD4 350 – 500 cells/mm^3 consider starting treatment
     - iii. CD5 >500 cells/mm^3 some experts recommend starting therapy
   - c. Pregnancy: HIV Specialty consultation required.
   - d. Chronic active hepatitis B coinfection requiring treatment
   - e. HIV associated nephropathy
2. What to use: monotherapy or dual therapy is **NEVER** acceptable; at a minimum, 3 agents must be used in combination
   - Efavirenz + Tenofovir + Emtricitabine (Atripla)
   - Atazanavir (Reyataz) boosted with Ritonavir (Norvir) + Tenofovir + Emtricitabine (Truvada)
   - Darunavir (Prezista) boosted with Ritonavir (Norvir) + Tenofovir + Emtricitabine (Truvada)
   - Raltegravir (Isentress) + Tenofovir + Emtricitabine (Truvada)

**See medication section for precautions and side effects. Pay particular attention to specific contraindications and interactions between HIV medications and the patient's existing medication profile.*

MONITORING

- Patients initiating antiretroviral medications may need follow up within 1-2 weeks after starting treatment to assess for toxicity, tolerability and adherence. Monthly laboratory assessment and clinical follow up may be required thereafter until the patient achieves an undetectable viral load.
- Well controlled patients (defined as HIV viral load undetectable and CD4 cell count >200 cells/mm3) require quarterly laboratory assessment and clinical follow up.

Aberg JA, et al. HIV Medicine Association of the Infectious Diseases Society of America. Primary Care Guidelines for the Management of Persons Infected with Human Immunodeficiency Virus: 2009 Update by the HIV Medicine Association of the Infectious Diseases Society of America. Clin Infect Dis. (2009) 49 (5): 651-681

CDC CLASSIFICATION SYSTEM FOR HIV-INFECTED ADULTS

KEY TO ABBREVIATIONS: CDC = U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION; PGL = PERSISTENT GENERALIZED LYMPHADENOPATHY.

CD4 CELL CATEGORIES	CLINICAL CATEGORIES		
	A ASYMPTOMATIC, ACUTE HIV, OR PGL	B SYMPTOMATIC CONDITIONS, NOT A OR C	C AIDS-INDICATOR CONDITIONS
(1) ≥500 cells/µL	A1	B1	C1
(2) 200-499 cells/µL	A2	B2	C2
(3) <200 cells/µL	A3	B3	C3

CATEGORY B SYMPTOMATIC CONDITIONS

Category B symptomatic conditions are defined as symptomatic conditions occurring in an HIV-infected adolescent or adult that meet at least 1 of the following criteria:

a) They are attributed to HIV infection or indicate a defect in cell-mediated immunity.

b) They are considered to have a clinical course or management that is complicated by HIV infection.

Examples include, but are not limited to, the following:

- Bacillary angiomatosis
- Oropharyngeal candidiasis (thrush)
- Vulvovaginal candidiasis, persistent or resistant
- Pelvic inflammatory disease (PID)
- Cervical dysplasia (moderate or severe)/cervical carcinoma in situ
- Hairy leukoplakia, oral
- Idiopathic thrombocytopenia purpura
- Constitutional symptoms, such as fever (>38.5°C) or diarrhea lasting >1 month
- Peripheral neuropathy
- Herpes zoster (shingles), involving ≥2 episodes or ≥1 dermatome

CATEGORY C AIDS-INDICATOR CONDITIONS

- Bacterial pneumonia, recurrent (≥2 episodes in 12 months)
- Candidiasis of the bronchi, trachea, or lungs
- Candidiasis, esophageal
- Cervical carcinoma, invasive, confirmed by biopsy
- Coccidioidomycosis, disseminated or extrapulmonary
- Cryptococcosis, extrapulmonary
- Cryptosporidiosis, chronic intestinal (>1-month duration)
- Cytomegalovirus disease (other than liver, spleen, or nodes)
- Encephalopathy, HIV-related
- Herpes simplex: chronic ulcers (>1-month duration), or bronchitis, pneumonitis, or esophagitis
- Histoplasmosis, disseminated or extrapulmonary
- Isosporiasis, chronic intestinal (>1-month duration)
- Kaposi sarcoma
- Lymphoma, Burkitt, immunoblastic, or primary central nervous system
- *Mycobacterium avium* complex (MAC) or *M kansasii* , disseminated or extrapulmonary
- *Mycobacterium tuberculosis* , pulmonary or extrapulmonary
- *Mycobacterium* , other species or unidentified species, disseminated or extrapulmonary
- *Pneumocystis jiroveci* (formerly *carinii*) pneumonia (PCP)
- Progressive multifocal leukoencephalopathy (PML)
- *Salmonella* septicemia, recurrent (nontyphoid)
- Toxoplasmosis of brain
- Wasting syndrome due to HIV (involuntary weight loss >10% of baseline body weight) associated with either chronic diarrhea (≥2 loose stools per day ≥1 month) or chronic weakness and documented fever ≥1 month

Centers for Disease Control and Prevention. 1993 Revised Classification System for HIV Infection and Expanded Surveillance Case Definition for AIDS Among Adolescents and Adults. MMWR **December 18, 1992 / 41(RR-17)** http://www.cdc.gov/mmwr/preview/mmwrhtml/00018871.htm

PROPHYLAXIS TO PREVENT FIRST EPISODE OF OPPORTUNISTIC DISEASE

PATHOGEN	INDICATION	FIRST CHOICE	ALTERNATIVE
Pneumocystis pneumonia (PCP)	CD4+ count <200 cells/μL or oropharyngeal candidiasis CD4+ <14% or history of AIDS-defining illness CD4+ count >200 but <250 cells/μL if monitoring CD4+ count every 1–3 months is not possible	Trimethoprim-sulfamethoxazole (TMP-SMX), 1 DS PO daily; or 1 SS daily	TMP-SMX 1 DS PO tiw or Dapsone 100 mg PO daily or 50 mg PO bid or Dapsone 50 mg PO daily + pyrimethamine 50 mg PO weekly + leucovorin 25 mg PO weekly or Aerosolized pentamidine 300 mg via Respigard II™ nebulizer every month or Atovaquone 1,500 mg* PO daily or Atovaquone 1,500 mg* + pyrimethamine 25 mg + leucovorin 10 mg PO daily
Toxoplasma gondii encephalitis	Toxoplasma IgG positive patients with CD4+ count <100 cells/μL Seronegative patients receiving PCP prophylaxis not active against toxoplasmosis should have toxoplasma serology retested if CD4+ count decline to <100 cells/μL Prophylaxis should be initiated if Toxoplasmosis IgG seroconversion occurred	TMP-SMX, 1 DS PO daily	TMP-SMX 1 DS PO tiw or TMP-SMX 1 SS PO daily Dapsone 50 mg PO daily + pyrimethamine 50 mg PO weekly + leucovorin 25 mg PO weekly or (Dapsone 200 mg + pyrimethamine 75 mg + leucovorin 25 mg) PO weekly ; (Atovaquone 1,500 mg* +/- pyrimethamine 25 mg + leucovorin 10 mg) PO daily
Mycobacterium tuberculosis infection (Treatment of latent TB infection or LTBI)	(+) diagnostic test for LTBI, no evidence of active TB, and no prior history of treatment for active or latent TB (-) diagnostic test for LTBI, but close contact with a person with infectious pulmonary TB and no evidence of active TB A history of untreated or inadequately treated healed TB (i.e., old fibrotic lesions) regardless or diagnostic tests for LTBI and no evidence of active TB	Isoniazid (INH) 300 mg PO daily + pyridoxine 50 mg PO daily for 9 months or Isoniazid (INH) 900 mg PO biw + pyridoxine 50 mg PO daily for 9 months For persons exposed to drug-resistant TB, selection of drugs after consultation with public health authorities	Rifampin (RIF) 600 mg PO daily x 4 months or Rifabutin (RFB) (dose adjusted based on concomitant ART) x 4 months Multiple drug-drug interactions exist between rifampin and HIV medications. Consultation with HIV specialist or pharmacist strongly advised.
Disseminated *Mycobacterium avium* complex (MAC) disease	CD4+ count <50 cells/μL after ruling out active MAC infection	Azithromycin 1,200 mg* PO once weekly or Clarithromycin 500 mg* PO bid or Azithromycin 600 mg* PO twice weekly	RFB 300 mg PO daily (dosage adjustment based on drug-drug interactions with ART); rule out active TB before starting RFB

In general, primary prophylaxis against the following conditions is not recommended:

- CMV
- Cryptococcal disease
- Histoplasmosis
- Candidiasis
- Coccidioidomycosis

HIV expert consultation required prior to any OI prophylaxis initiation, dosage change, or discontinuation.

Centers for Disease Control and Prevention. Guidelines for Prevention and Treatment of Opportunistic Infections in HIV-Infected Adults and Adolescents. MMWR 2009;58: Pg.145-146.

*NON-FORMULARY/RESTRICTED. SEE FORMULARY FOR DETAILS.

ANTIRETROVIRAL (ARV) REGIMENS RECOMMENDED FOR TREATMENT-NAÏVE PATIENTS

NOTE: DO NOT INITIATE, CHANGE OR DISCONTINUE HIV MEDICATIONS WITHOUT FIRST CONSULTING AN HIV SPECIALIST.

PREFERRED REGIMENS (REGIMENS WITH OPTIMAL AND DURABLE EFFICACY, FAVORABLE TOLERABILITY AND TOXICITY PROFILE, AND EASE OF USE)

The preferred regimens for non-pregnant patients are arranged by order of FDA approval of components other than nucleosides, thus, by duration of clinical experience.

Non-Nucleoside Reverse Transcriptase Inhibitors-based Regimen **Efavirenz/ Tenofovir/ Emtricitabine** Protease Inhibitor based Regimens *(in alphabetical order)* **Atazanavir boosted with Ritonavir + Tenofovir/ Emtricitabine** **Darunavir boosted with Ritonavir (once daily) + Tenofovir/Emtricitabine** Intergrase Strand Transfer Inhibitor-based Regimen **Raltegravir + Tenofovir/ Emtricitabine** Preferred Regimen for Pregnant Women **Lopinavir/Ritonavir (twice daily) + Zidovudine + Lamivudine**	**Comments** **Efavirenz:** • Should not be used during the first trimester of pregnancy or in women trying to conceive or not using effective and consistent contraception. **Atazanavir:** • Should not be used in patients who require >20mg omeprazole equivalent per day. **Darunavir:** • Treatment experienced patients with a history of resistance to HIV medications require twice daily Darunavir boosted with Ritonavir. Consult an HIV specialist for dosing requirements.

ALTERNATIVE REGIMENS (REGIMENS THAT ARE EFFECTIVE AND TOLERABLE BUT HAVE POTENTIAL DISADVANTAGES COMPARED WITH PREFERRED REGIMENS. AN ALTERNATIVE REGIMEN MAY BE THE PREFERRED REGIMEN FOR SOME PATIENTS.)

Non-Nucleoside Reverse Transcriptase Inhibitors-based Regimens *(in alphabetical order)* Efavirenz + (Abacavir or Zidovudine) + Lamivudine Nevirapine + Zidovudine + Lamivudine Protease Inhibitor based Regimens *(in alphabetical order)* Atazanavir boosted with Ritonavir + (Abacavir or Zidovudine)+ Lamivudine Fosamprenavir boosted with Ritonavir (once or twice daily) + either [(Abacavir or Zidovudine) + Lamivudine] or Tenofovir/ Emtricitabine Lopinavir/Ritonavir (once or twice daily) + either [(Abacavir or Zidovudine) + Lamivudine] or Tenofovir/Emtricitabine	**Comments** **Nevirapine:** • Should not be used in patients with moderate to severe hepatic impairment (Child-Pugh B or C) • Should not be used in women with pre-ARV CD4 >250 cells/mm3 or men with pre-ARV CD4 >400 cells/mm3 **Abacavir:** • Should not be used in patients who test positive for HLA-B*5701 • Use with caution in patients with high risk of cardiovascular disease or with pretreatment HIV-RNA >100,000 copies/mL **Once-daily Lopinavir/Ritonavir** is not recommended in pregnant women.

Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Department of Health and Human Services. January 10, 2011; 1-166. Available at http://www.aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf

DENTAL MANAGEMENT OF HIV INFECTED PATIENTS

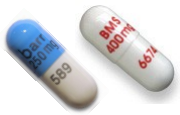
An otherwise stable HIV infected patient does not require special precautions or prophylaxis beyond universal precautions and the routine standard of care. Be aware that in cases of advanced immunosuppression, dental staff may consult medical staff for additional recommendations. For more information see the *Dental Management of Medically Complex Patients* at http://dental.pacific.edu/Documents/dental_prof/Medically_Complex.pdf

RECOMMENDED IMMUNIZATIONS FOR HIV POSITIVE ADULTS

PLEASE NOTE THAT VACCINATIONS CAN CAUSE A TRANSIENT INCREASE IN HIV VIRAL LOAD WITHIN A FEW WEEKS AFTER ADMINISTRATION. THIS INCREASE SHOULD RESOLVE OVER TIME AND DOES NOT USUALLY INDICATE THE DEVELOPMENT OF ANTIRETROVIRAL DRUG RESISTANCE.

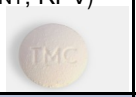
IMMUNIZATION NAME	ASSOCIATED DISEASE	DOSAGE	COMMENTS AND WARNING
RECOMMENDED FOR ALL HIV POSITIVE ADULTS			
Hepatitis B Virus (HBV)	Hepatitis B	3 shots over a 6-month period	Recommended unless there is evidence of immunity (Hepatitis B sAb positive) or active hepatitis (Hepatitis B sAg positive). Consider vaccination if isolated HBV cAb positive and HBV viral load negative. Blood test to check for HBV antibody levels should be done after completion of immunization series. Additional shots may be necessary if antibody levels are too low.
Influenza	Flu	1 shot	Must be given every year. Only injectable flu vaccine should be given to those who are HIV positive. The nasal spray vaccine (FluMist/LAIV) should not be used in this population.
Polysaccharide pneumo-coccal	Pneumonia	1 or 2 shots	Should be given soon after HIV diagnosis, unless vaccinated within the previous 5 years. If CD4 count is < 200 cells/mm3 when the vaccine is given, immunization should be repeated when CD4 count is > 200 cells/mm3. Repeat one time after 5 years.
Tetanus and Diptheria Toxoid (Td)	1. Lockjaw 2. Diptheria	1 shot	Repeat every 10 years.
Tetanus, Diphtheria, and Pertussis (Tdap)	1. Lockjaw 2. Diptheria 3. Pertussis	1 shot	Recommended for adults 64 years of age or younger and should be given in place of next Td booster. Can be given as soon as 2 years after last Td for persons in close contact with babies under 12 months and health care workers.
RECOMMENDED FOR SOME HIV POSITIVE ADULTS			
Hepatitis A Virus (HAV)	Hepatitis A	2 shots over a 1 or 1.5 year period	Recommended for all non-immune (Hepatitis A IgG Negative) HIV infected inmate-patients.
Hepatitis A/Hepatitis B Combined Vaccine (Twinrix)	1. Hepatitis A 2. Hepatitis B	3 shots over a 6 month period or 4 shots over a 1-year period	Can be used in those who require both HAV and HBV immunization.
Haemophilus influenzae Type B	Bacterial menin-gitis	1 shot	HIV positive adults and their health care providers should discuss whether Haemophilus influenzae immunization is needed.
Measles, Mumps, and Rubella (MMR)	1. Measles 2. Mumps 3. Rubella (German Mea-sles)	1 or 2 shots	People born before 1957 do not need to receive this vaccine. HIV positive adults with CD4 counts < 200 cells/mm3 or clinical symptoms of HIV should not get the MMR vaccine. Each component can be given separately if needed to achieve ade-quate antibody levels.
Meningococcal	Bacterial menin-gitis	1 or 2 shots	Recommended for college students, military recruits, people who do not have a spleen, and people traveling to certain parts of the world. Repeat after 5 years if still at risk for infection.
Varicella	Chickenpox	2 shots over 4-8 weeks	People born before 1980 do not need to receive this vaccine. Recommended unless there is evidence of immunity or CD4 count is 200 cells/mm^3 or below. Not recommended to be given during pregnancy.
NOT RECOMMENDED FOR HIV POSITIVE ADULTS			
Anthrax	Anthrax	The currently available smallpox vaccine is a live viral vaccine. Some live vaccines are not recom-mended for people with HIV. Although the currently licensed anthrax vaccine is not a live vaccine, the Advisory Committee on Immunization Practices does not recommend routine anthrax vaccination.	
Smallpox	Smallpox		
Zoster	Shingles		

This information is based on: (1) Recommended Adult Immunization Schedule - United States, January 9, 2009. Centers for Disease Control Website. Available at: http://www.cdc.gov/vaccines/recs/schedules/adult-schedule.htm. Accessed May 12, 2009. (2) MMWR Quick Guide Recommended Adult Immunization Schedule - United States, January 2009. Centers for Disease Control Web site. Available at: http://www.cdc.gov/mmwr/PDF/wk/mm5753-Immunization.pdf. Accessed May 12 2009. (3) MMWR General Recommendations on Immunization December 1, 2006 / Vol.55 / No. RR-15. Centers for Disease Control Web site. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5515a1.htm. Accessed May 12, 2009.

ALL CLASSES	• Current recommended minimum effective combination consists of 3 antiretroviral medications from a minimum of 2 classes. **DO NOT PRESCRIBE AS MONOTHERAPY.** If one medication is discontinued due to toxicity or other reason, discontinue combination. • Monitor for hepatotoxicity; use with caution in patients coinfected with chronic Hepatitis B or C or end stage liver disease. • Multiple drug-drug interactions between many antiretroviral medications and other medication classes including but not limited to certain antimicrobials, analgesics, antiarrhythmics, oral contraceptives, anxiolytics, lipid lowering agents, acid lowering agents, herbal preparations, corticosteroids, anticonvulsants. Consult an HIV specialist, pharmacist, http://aidsinfo.nih.gov/contentfiles/AdultandAdolescentGL.pdf or http://www.epocrates.com prior to initiating or changing therapies for concurrent medical conditions.			
Medication	**Formulation**	**Side Effects**	**Special Notes**	**Cost**
NUCLEOSIDE/ NUCLEOTIDE REVERSE TRANSCRIPTASE INHIBITORS (NRTI)	Many NRTIs are associated with: • Hepatic steatosis • Lactic Acidosis (rare but potentially fatal): look for N/V, abdominal pain, fatigue, weakness, dyspnea with an associated metabolic acidosis discontinue all potential offending agents immediately • Lipodystrophy			
ABACAVIR (ZIAGEN, ABC) 	Tablet: 300mg Solution 20mg/ml*	Hypersensitivity reaction; potentially FATAL if rechallenged	Hypersensitivity associated with positive HLA-B*5701: screen prior to initiation Hypersensitivity reaction: look for fever, rash, GI symptoms, cough, dyspnea, pharyngitis Dose adjustment for hepatic dysfunction Avoid in treatment naïve patient if HIV viral load > 100,000 copies/ml	$$$$$
DIDANOSINE (VIDEX, DDI) 	Delayed release capsule: 200mg* 250mg 400mg Powder for solution: 2gm* 4gm*	Peripheral Neuropathy Pancreatitis Lactic acidosis	Weight based dosing Dose adjustment for renal dysfunction Dose adjustment if given with Tenofovir Avoid in combination with Stavudine Contraindicated for use with Ribavirin Lactic acidosis: look for N/V, abdominal pain, fatigue, weakness, dyspnea – discontinue immediately Prolonged exposure associated with noncirrhotic portal hypertension with esophageal varices	$$$$$
EMTRICITABINE (EMTRIVA, FTC) 	Capsule: 200mg	Severe acute exacerbation of chronic Hepatitis B can occur with abrupt discontinuation in patients coinfected with chronic Hepatitis B	Active against chronic Hepatitis B Dose adjustment for renal dysfunction Contraindicated for use with Lamivudine	$$$$$
LAMIVUDINE (EPIVIR, 3TC) 	Tablet: 100mg* 150mg 300mg Solution: 10mg/ml*	Severe acute exacerbation of chronic Hepatitis B can occur with abrupt discontinuation in patients coinfected with chronic Hepatitis B	Active against chronic Hepatitis B Dose adjustment for renal dysfunction Contraindicated for use with Emtricitabine	$$$$$
STAVUDINE (ZERIT, D4T) 	Capsule: 15mg* 20mg* 30mg 40mg	Peripheral Neuropathy Pancreatitis Lactic acidosis Hyperlipidemia	Weight based dosing Dose adjustment for renal dysfunction Avoid in combination with Didanosine Contraindicated for use with Zidovudine Lactic acidosis: look for N/V, abdominal pain, fatigue, weakness, dyspnea - discontinue immediately	$$$$$
TENOFOVIR (VIREAD, TDF) 	Tablet: 300mg	Severe acute exacerbation of chronic Hepatitis B can occur with abrupt discontinuation in patients coinfected with chronic Hepatitis B Renal impairment, Fanconis Syndrome Decreased bone mineral density	Active against chronic Hepatitis B Dose adjustment for renal dysfunction Dose adjustments if given in combination with Didanosine and/or Atazanavir	$$$$$
ZALCITABINE (HIVID, DDC) 	No longer manufactured			
ZIDOVUDINE (RETROVIR, AZT) 	Tablet: 300mg Syrup: 50mg/ml* Capsule: 100mg*	Bone marrow suppression Anemia (usually macrocytic) Myopathy Nausea	Contraindicated for use with Stavudine Caution in use with other agents that cause bone marrow suppression Dose adjustment for renal dysfunction	$$$$$

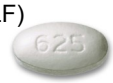
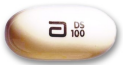
MEDICATIONS (NOTE: DO NOT INITIATE, CHANGE OR DISCONTINUE HIV MEDICATIONS WITHOUT FIRST CONSULTING AN HIV SPECIALIST.)

NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS (NNRTI)	Many NNRTIs are associated with: Rash and potential Stevens Johnson Syndrome: monitor for rash during initiation of these medications and discontinue if severe or accompanied by mucous membrane involvement. Less severe rash may be treated with antihistamines and followed closely. Hyperlipidemia Multiple drug-drug interactions; consult an HIV specialist, pharmacist, http://aidsinfo.nih.gov/contentfiles/AdultandAdolescentGL.pdf or http://www.epocrates.com for specifics. Cross class resistance; if history of prior NNRTI use and poor virologic response, consult HIV specialist prior to initiation of second NNRTI. Long half life: consult HIV specialist if possible prior to discontinuation to avoid the emergence of resistant mutations.

MEDICATION	FORMULATION	SIDE EFFECTS	SPECIAL NOTES	COST
DELAVIRDINE (RESCRIPTOR (DLV) 	Tablet: 200mg*		Not 1st line agent; rarely used.	$$$$$
EFAVIRENZ (SUSTIVA, EFV) 	Tablet: 600mg Capsule: 50mg* 100mg* 200mg*	CNS side effects: dizziness, bizarre dreams False positive with certain types of cannabanoid testing Rash	Potentially teratogenic especially in 1st trimester; category D: obtain pregnancy test prior to starting in women of child bearing potential. Avoid taking with a high fat meal.	$$$$$
ETRAVIRINE (INTELENCE, ETR) 	Tablet: 100mg* 200mg*	Hepatotoxicity Hypersensitivity reaction Rash		$$$$$
NEVIRAPINE (VIRAMUNE, NVP) 	Tablet: 200mg Solution: 50mg/5ml*	Hepatotoxicity Rash	Avoid starting Nevirapine in women with CD4 >250 cells/mm^3 or men with CD4 >400 cells/mm^3. Once patients on NVP reach a CD4 cell count higher than these cut-offs, they are not required to discontinue unless otherwise indicated. Dose escalation with initiation: 200 mg daily for 2 weeks then 200mg 1 BID or 2 QD. Monitor LFTs baseline, 2 weeks after initiation and monthly for the 1st 18 weeks of therapy; discontinue if clinical hepatitits or severe rash occurs and do not rechallenge.	$$$$$
RILPIVIRINE (EDURANT, RPV) 	Tablet: 25 mg*	Depression, insomnia, headache, rash	Requires an acid environment for optimal absorption. Contraindicated for use with proton pump inhibitors; specific dosing recommendations for use with other acid lowering agents. Consult an HIV specialist or package insert for specifics. Use with caution in patients with baseline HIV viral load >100,000	$$$$$
PROTEASE INHIBITOR (PI)	Many PIs are associated with: • Extensive drug-drug interactions; consult an HIV specialist, pharmacist or http://aidsinfo.nih.gov/contentfiles/AdultandAdolescentGL.pdf for specifics. • Hyperlipidemia, Hyperglycemia; Lipodystrophy/ Fat redistribution; Elevated transaminases; GI intolerance: Nausea, vomiting, diarrhea; Hepatotoxicity especially in patients with underlying liver disease or coinfection with Hepatitis B or C; Increased bleeding in hemophiliacs Most PIs are prescribed in combination with Ritonavir in order to achieve more optimal drug levels.			
ATAZANAVIR (REYATAZ, ATV) 	Capsule: 150mg* 200mg 300mg	Indirect hyperbilirubinemia: jaundice, scleral icterus. Rarely a cause for discontinuation PR prolongation Nephrolithiasis (rare)	Requires an acid environment for optimal absorption; specific dosing recommendations for use with proton pump inhibitors, H2 blockers, antacids: consult an HIV specialist or http://aidsinfo.nih.gov/contentfiles/AdultandAdolescentGL.pdf for specifics. Dose adjustment for hepatic dysfunction Dose adjustment if given with Tenofovir.	$$$$$

***NON-FORMULARY/RESTRICTED. SEE FORMULARY FOR DETAILS.**

MEDICATIONS (NOTE: DO NOT INITIATE, CHANGE OR DISCONTINUE HIV MEDICATIONS WITHOUT FIRST CONSULTING AN HIV SPECIALIST.)

MEDICATION	FORMULATION	SIDE EFFECTS	SPECIAL NOTES	COST
PROTEASE INHIBITOR (PI) (CONTINUED)				
DARUNAVIR (PREZISTA, DRV) 	Tablet: 400mg 600mg	Rash; caution if sulfonamide allergy. Stevens Johnson Syndrome has been reported Headache	Should always be used with Ritonavir	$$$$$
FOSAMPRENAVIR (LEXIVA, LEX) 	Tablet: 700mg	Rash; caution if sulfonamide allergy Nephrolithiasis (rare)	Dose adjustment for hepatic dysfunction	$$$$$
INDINAVIR (CRIXIVAN, IND) 	Capsule: 200mg 400mg	Headache, Asthenia, Metallic taste Thrombocytopenia, Hemolytic anemia Alopecia Indirect hyperbilirubinemia: jaundice, scleral icterus - rarely a cause for discontinuation Nephrolithiasis	Dose adjustment for hepatic dysfunction	$$$$$
KALETRA (LOPINAVIR/RITONAVIR LPV) 	Tablet: 200mg-50mg 100mg-25mg* Solution: 400mg-100mg/5ml*	Asthenia PR and QT prolongation	Coformulated with ritonavir	$$$$$
NELFINAVIR (VIRACEPT, NLF) 	Tablet: 250mg* 625mg Powder: 50mg/gm*	Diarrhea	Do not use with Ritonavir	$$$$$
RITONAVIR (NORVIR, RTV) 	Tablet: 100mg Capsule: 100mg Solution: 80mg/ml*	Parethesia – circumoral and extremities Asthenia Taste perversion	Ritonavir primarily used to increase the levels of other PIs. Full dose ritonavir poorly tolerated.	$$$$$
SAQUINAVIR (INVIRASE, SQV) 	Tablet: 500mg Capsule: 200mg*	Headache PR and QT prolongation	Should always be used with Ritonavir Pre Treatment EKG is recommended.	$$$$$
FORTOVASE (SAQUINAVIR, SGC) 	N/A	No longer manufactured		N/A
TIPRANAVIR (APTIVUS, TPV) 	Capsule: 250mg	Rash; caution if sulfonamide allergy. Potentially fatal hepatotoxicity Intracranial hemorrhage	Should always be used with Ritonavir	$$$$$
INTEGRASE STRAND TRANSFER INHIBITOR (INSTI)				
RALTEGRAVIR (ISENTRESS, RAL) 	Tablet: 400mg	Asthenia Nausea Diarrhea Headache CPK elevation		$$$$$
FUSION INHIBITOR				
ENFUVIRTIDE (FUZEON, T20) 	For injection: 90mg/vial*	Injection site reactions Increased bacterial pneumonia Hypersensitivity reaction	Subcutaneous injection BID	$$$$$

*NON-FORMULARY/RESTRICTED. SEE FORMULARY FOR DETAILS.

MEDICATIONS (NOTE: DO NOT INITIATE, CHANGE OR DISCONTINUE HIV MEDICATIONS WITHOUT FIRST CONSULTING AN HIV SPECIALIST.)

MEDICATION	FORMULATIONS	SIDE EFFECTS	SPECIAL NOTES	COST
CCR5 INHIBITOR	Only active against CCR5 tropic strains of HIV: must obtain tropism assay ("Trofile") prior to initiation.			
MARAVIROC (SELZENTRY, MVC) 	Tablet: 150mg* 300mg*	Abdominal pain Cough Dizziness Rash Hepatotoxicity Orthostatic hypotension	Many drug-drug interactions; consult an HIV specialist, pharmacist or http://aidsinfo.nih.gov/contentfiles/AdultandAdolescentGL.pdf prior to initiation Tropism testing required prior to starting.	$$$$$
NUCLEOSIDE/TIDE REVERSE TRANSCRIPTASE INHIBITOR (NRTI)				
ABACAVIR/ LAMIVUDINE (EPZICOM, EPZ) 	Tablet: 600mg/300mg	Use information regarding each individual component, listed above.	Use information regarding each individual component, listed above.	$$$$$
EFAVIRENZ/TENOFOVIR/ EMTRICITABINE (ATRIPLA) 	Tablet: 600mg/200mg/300 mg	Use information regarding each individual component, listed above.	Use information regarding each individual component, listed above.	$$$$$
TENOFOVIR/ EMTRICITABINE (TRUVADA, TVD) 	Tablet: 200mg/300mg	Use information regarding each individual component, listed above.	Use information regarding each individual component, listed above.	$$$$$
ZIDOVUDINE / LAMIVUDINE (COMBIVIR, CMB) 	Tablet: 150mg/300mg*	Use information regarding each individual component, listed above.	Use information regarding each individual component, listed above.	$$$$$
ZIDOVUDINE / LAMIVUDINE /ABACAVIR (TRIZIVIR, TZV) 	Tablet: 300mg/150mg/300 mg*	Use information regarding each individual component, listed above.	Use information regarding each individual component, listed above.	$$$$$
PRIMARY OPPORTUNISTIC INFECTION PROPHYLACTIC MEDICATIONS	Consult an HIV specialist OR http://aidsinfo.nih.gov/contentfiles/Adult_OI_041009.pdf prior to discontinuing prophylaxis when possible			
PNEUMOCYSTIS JIROVECI (PCP) PROPHYLAXIS: START IF CD4 < 200 CELLS/MM3, CD4 % <14% OR THE PRESENCE OF ORAL CANDIDIASIS				
TRIMETHOPRIM-SULFAMETHOXAZOLE (SMX-TMP, BACTRIM DS, SEPTRA DS)		Rash, Stevens Johnson Syndrome Hematologic abnormalities	Dose adjustment for renal dysfunction Use with caution if G6PDdeficient (rare)	$
DAPSONE (ACZONE)		Rash, hypersensitivity reaction Hematologic abnormalities Hemolytic anemia (G6PD related) Neuropathy	Contraindicated in G6PD deficiency	$
ATOVAQUONE (MEPRON)*		Rash, GI intolerance		$$$$$
PENTAMIDINE (PENTAM)		Rash, Renal impairment, Bronchospasm, Arrhythmia, Hematologic abnormalities	Given via nebulizer for prophylaxis Dose adjustment for renal dysfunction	$$$
TOXOPLASMA GONDII PROPHYLAXIS: START IF CD4 <100 CELLS/MM3 AND PATIENT HAS POSITIVE TOXO IGG				
TRIMETHOPRIM SULFAMETHOXAZOLE (SMX-TMP, BACTRIM DS, SEPTRA DS)		See above Pneumocystis jiroveci (PCP) prophylaxis section		
DAPSONE PLUS PYRIMETHAMINE (DARAPRIM) AND LEUKOVORIN		See above Pneumocystis jiroveci (PCP) prophylaxis section Pyrimethamine (Daraprim): Hemolytic anemia (G6PD related)		
MYCOBACTERIUM AVIUM COMPLEX (MAC): START IF CD4 <50 CELLS/MM3				
AZITHROMYCIN *		Rash, Diarrhea, Nausea, Abdominal pain		
CLARITHROMYCIN*		Rash, Diarrhea, Nausea, Abdominal pain, Pseudomembranous colitis		

***NON-FORMULARY/RESTRICTED. SEE FORMULARY FOR DETAILS.**

DRUG-DRUG INTERACTIONS BETWEEN HIV MEDICATIONS AND CCHCS FORMULARY MEDICATIONS:

Note: this is not a comprehensive list of all interactions between HIV medications and other agents. Please consult http://www.aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf for additional details.

	NRTI							NNRTI				PI									Other		
	Abacavir	Didanosine	Emtricitabine	Lamivudine	Stavudine	Tenofovir	Zidovudine	Efavirenz	Etravirine	Nevirapine	Rilpivirne	Atazanavir	Darunavir	Fosamprenavi	Indinavir	Lopinavir/RTV	Nelfinavir	Ritonavir	Saquinavir	Tipranavir	Raltegravir	Enfuvirtide	Maraviroc
Anticoagulants/Antiplatelets																							
Warfarin								✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓			
Clopidogrel									X														
Anticonvulsants																							
Carbamazepine								✓	X	✓	X	✓	✓	✓	✓	X/✓	✓	✓	✓	✓			✓
Lamotrigene												✓	✓	✓	✓		✓	✓	✓	✓			
Phenobarbital								✓	X	✓	X	✓	✓	✓	✓	X/✓	✓	✓	✓	✓			✓
Phenytoin								✓	X	✓	X	✓	✓	✓	✓	X/✓	✓	✓	✓	✓			✓
Valproic Acid																✓							
Antifungals																							
Fluconazole									✓	✓	✓									X/✓			
Itraconazole								✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓			✓
Antimicrobial/antimycobacterials																							
Clarithromycin								✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓				✓
Rifabutin								✓	X/✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓				✓
Rifampin								✓	X	X	X	X	X	X	X	X	X	X	X	X	✓		X
Other antivirals																							
Ribavirin		X					✓																
Asthma/COPD medications																							
Fluticasone (inhaled or intranasal)												✓	✓	✓	✓	✓	✓	✓	✓	✓			
Salmeterol												X	X	X	X	X	X	X	X	X			
Cardiac medications																							
Digoxin																		✓	✓				
Dihydropyridine CCB: (Amlodipine, Nifedipine, Felodipine)								✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓			
Diltiazem								✓		✓		✓	✓	✓		✓		✓	✓	✓			
Amiodarone																	X	X	X	X			
Flecanide														X				X	X	X			
Quinidine																	X	X	X	X			
Lidocaine																			X				

X CONTRAINDICATED; ✓USE WITH CAUTION, CONSIDER ALTERNATIVE AGENT AND/OR DOSING ADJUSTMENT RECOMMENDED; Please consult http://www.aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf for additional details. For additional details regarding Nelfinavir, please consult http://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?id=33770. For additional details regarding Indinavir, please consult http://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?id=32971. For additional details regarding Rilpivirine, please consult http://www.edurant-info.com/sites/default/files/EDURANT-PI.pdf

DRUG-DRUG INTERACTIONS BETWEEN HIV MEDICATIONS AND CCHCS FORMULARY MEDICATIONS:

Note: this is not a comprehensive list of all interactions between HIV medications and other agents. Please consult http://www.aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf for additional details.

	NRTI							NNRTI				PI								Other		
	Abacavir	Didanosine	Emtricitabine	Lamivudine	Stavudine	Tenofovir	Zidovudine	Efavirenz	Etravirine	Nevirapine	Rilpivirne	Atazanavir	Darunavir	Fosamprenavir	Indinavir	Lopinavir/RTV	Nelfinavir	Ritonavir	Saquinavir	Tipranavir	Raltegravir	Enfuvirtide	Maraviroc
Lidocaine																			X				
Corticosteroids																							
Dexamethasone									✓		X	✓	✓	✓	✓	✓		✓	✓	✓			
Fluticasone (inhaled or intranasal)												✓	✓	✓	✓	✓	✓	✓	✓	✓			
Gastrointestinal medications																							
Antacids											✓	✓		✓						✓			
Omeprazole											X	X/✓					X		✓	✓			
Ranitidine											✓	✓		✓									
Hormonal Contraceptives																							
Ethinyl Estradiol								✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓			
Lipid lowering medications																							
Lovastatin								✓	✓	✓		X	X	X	X	X		X	X	X			
Pravastatin								✓					✓	✓	✓	✓	✓		✓	✓	✓		
Simvastatin								✓	✓	✓		X	X	X	X	X		X	X	X			
Rosuvastatin												✓	✓	✓	✓	✓	✓	✓	✓	✓			
Miscellaneous																							
Allopurinol		X																					
Colchicine												✓	✓	✓	✓	✓	✓	✓	✓	✓			
Ergot derivatives								X				X	X	X	X	X	X	X	X	X			
Narcotics																							
Methadone								✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Psychiatric medications																							
Amitriptyline												✓	✓	✓	✓	✓		✓	✓	✓			
Nortriptyline												✓	✓	✓	✓	✓		✓	✓	✓			
Paroxetine													✓	✓									
Sertraline								✓					✓										

X CONTRAINDICATED; ✓USE WITH CAUTION, CONSIDER ALTERNATIVE AGENT AND/OR DOSING ADJUSTMENT RECOMMENDED; Please consult http://www.aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf for additional details. For additional details regarding Nelfinavir, please consult http://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?id=33770. For additional details regarding Indinavir, please consult http://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?id=32971. For additional details regarding Rilpivirine, please consult http://www.edurant-info.com/sites/default/files/EDURANT-PI.pdf

PATIENT EDUCATION: HIV

WHAT YOU SHOULD KNOW ABOUT HIV:

1. AIDS is caused by HIV.

2. You can have HIV for years and not feel sick.

3. HIV, if left untreated, gradually destroys your immune system, leaving you at risk for other serious and potentially deadly infections. Effective treatment, when given early, can save your life.

4. There is no cure or vaccine for HIV. Effective treatment can prolong your life and prevent potentially painful and serious complications.

5. **Know your status:** ask your medical provider for a routine HIV test if you have never been tested. HIV may take up to six months to become detectable in your body.

6. **Protect yourself:** *Sexual activity and the use of needles for non-prescribed purposes is illegal within the California Department of Corrections and Rehabilitation and may lead to prosecution.* Know how HIV is most commonly passed and avoid those risky behaviors. HIV can be transmitted through unprotected sexual contact and sharing needles with someone who is HIV infected.

7. **Know how HIV is NOT spread:** dry kissing, shaking hands, hugging, sharing utensils or food, toilets.

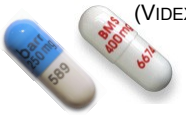
8. If you have been exposed, seek medical attention, especially if you have flu-like symptoms, night sweats, fevers, weight loss, diarrhea, swollen lymph glands, oral thrush (white fungus patches in your mouth) or vaginal yeast infections.

HIV MEDICATIONS PRESCRIBED TO: _____

NUCLEOSIDE/NUCLEOTIDE REVERSE TRANSCRIPTASE INHIBITORS (NRTI)

- ☐ ABACAVIR (ZIAGEN, ABC)

- ☐ DIDANOSINE (VIDEX, DDI)



- ☐ EMTRICITABINE (EMTRIVA, FTC)

- ☐ LAMIVUDINE (EPIVIR, 3TC)

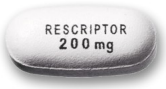
- ☐ STAVUDINE (ZERIT, D4T)

- ☐ TENOFOVIR (VIREAD, TDF)

- ☐ ZIDOVUDINE (RETROVIR, AZT)

NON-NUCLEOSIDE REVERSE TRANSCIPTASE INHIBITORS (NNRTI)

- ☐ DELAVIRDINE (RESCRIPTOR DLV)



- ☐ EFAVIRENZ (SUSTIVA/EFV)

- ☐ ETRAVIRINE (INTELENCE, ETR)

- ☐ NEVIRAPINE (VIRAMUNE, NVP)

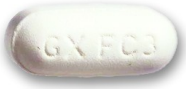
- ☐ RILPIVIRINE (EDURANT, RPV)

COFORMULATIONS

- ☐ EFAVIRENZ/TENOFOVIR/EMTRICITABINE (ATRIPLA)

- ☐ TENOFOVIR/EMTRICITABINE (TRUVADA, TVD)

- ☐ ZIDOVUDINE / LAMIVUDINE (COMBIVIR, CMB)



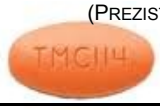
- ☐ ABACAVIR/LAMIVUDINE (EPZICOM, EPZ)

- ☐ ZIDOVUDINE /LAMIVUDINE / ABACAVIR (TRIZIVIR, TZV)

PROTEASE INHIBITOR (PI)

- ☐ ATAZANAVIR (REYATAZ, ATV)

- ☐ DARUNAVIR (PREZISTA, DRV)



- ☐ FOSAMPRENAVIR (LEXIVA, LEX)

- ☐ INDINAVIR (CRIXIVAN, IND)

- ☐ KALETRA (LOPINAVIR/ RITONAVIR LPV)

- ☐ NELFINAVIR (VIRACEPT, NLF)

- ☐ RITONAVIR (NORVIR, RTV)

- ☐ SAQUINAVIR (INVIRASE, SQV)

- ☐ TIPRANAVIR (APTIVUS, TPV)

OTHER

- ☐ ENFUVIRTIDE (FUZEON, T20)

- ☐ MARAVIROC (SELZENTRY, MVC)

- ☐ RALTEGRAVIR (ISENTRESS, RAL)

HIV: WHAT YOU SHOULD KNOW

1) There is no cure for HIV, but effective treatment when started early and taken consistently can prolong your life and prevent serious and painful complications and decrease the risk of you transmitting HIV to others.

2) **HIV medications must be taken daily**. Missing doses increases your risk of developing resistance, which would mean that the medications are no longer able to control your HIV. Sometimes, resistance can develop to medications that you have not yet taken, and your future treatment options may become very limited.

3) **Know your numbers:** what labs help you know how you are doing?
   - CD4 cell count (also called T cell count) tells you how strong your immune system is. A normal CD4 cell count is 700 – 1200; dangerous is 200 and below. The goal of treatment is to get your CD4 cells as high as possible by controlling your HIV viral load, and to take medications to prevent other infections if your CD4 is dangerously low.
   - HIV viral load measures how much HIV is present throughout your bloodstream. The goal of treatment is to have a very low viral load level, also called "undetectable" on lab reports. Remember, if your viral load is undetectable, you still have HIV, you are still potentially infectious and if you stop your medications your viral load will increase again which will cause your CD4 cells count level to worsen.

4) **Notify medical personnel** if you are unable to take your HIV medications due to severe side effects, forgetfulness or other reasons.

5) Protect others: *Sexual activity and the use of needles for non-prescribed purposes is illegal within the California Department of Corrections and Rehabilitation and may lead to prosecution.* Know how HIV is most commonly passed and avoid those risky behaviors. HIV can be transmitted through unprotected sexual contact and sharing needles.

6) Know how HIV is NOT spread: dry kissing, shaking hands, hugging, sharing utensils or food, toilets.

YOUR MEDICATION SCHEDULE:

NAME OF MEDICATION	FOOD REQUIREMENT?	*(number of pills)*			
		MORNING	LUNCH	DINNER	BEFORE BEDTIME

YOUR MOST RECENT CD4 CELL COUNT WAS _____ ON (DATE) _____

YOUR MOST RECENT HIV VIRAL LOAD WAS _____ ON (DATE)_____